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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,000	02/18/2004	Moris Dovek	HT03-005	2422

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28 DAVIS AVENUE
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EXAMINER

KLIMOWICZ, WILLIAM JOSEPH

ART UNIT	PAPER NUMBER
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2627

MAIL DATE	DELIVERY MODE
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11/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/781,000

Applicant(s)

DOVEK ET AL.

Examiner

William J. Klimowicz

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,19 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,19 and 21-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 2, 2007 has been entered.

Claim Status

Claims 1, 3-6, 19 and 21-24 are currently pending.

Claims 2, 7-18, 20 and 25-36 have been voluntarily cancelled by the Applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-6, 19 and 21-24 rejected under 35 U.S.C. 103(a) as being unpatentable over Carpenter et al. (WO 98/20485 A1) in view of Murata et al. (JP 06-342858 A).

As per claims 1 and 19, Carpenter et al. (WO 98/20485 A1) discloses a crosstalk and EME (electromagnetic emission) minimizing trace suspension assembly structure (16) and a

method thereof, comprising: multiple write lines (e.g., 60, 62) which are crossed between a preamplifier connection point (at 54) and slider write contact pads (22) (e.g., see, *inter alia*, page 7, line 12-23 and page 8, lines 20-29); multiple read lines (e.g., 60, 62 - see in particular page 8, lines 21-25) driven by preamplifier circuits (including 54); the aforementioned slider contact pads (22), which connect said write lines (60, 62) to said trace suspension assembly (16); the aforementioned slider contact pads (22), which connect said read lines (another set of service lines (60, 62) to said trace suspension assembly (16); and multiple write line driven by preamplifier circuits (at 54 via the semiconductor IC chip), wherein said multiple write lines which are crossed between said preamplifier connection point and said slider contact pads are used to cancel out time-delayed (transmission line effects) parts of said crosstalk and said EME.

As per claims 3 and 21, wherein said crossing point of said write line (60, 62) is made by the addition of a second metallization layer (e.g., 60A or 62A) onto said trace suspension assembly (16).

As per claims 4 and 22, wherein multiple crossing points of said write lines are used to further cancel out time-delayed (transmission line effects) parts of said crosstalk and EME (based on the crossover structure of the lines (60, 62)).

As per claims 5 and 23, wherein said write lines (60, 62) have parasitic capacitance between the write lines and the read lines (another set of service lines (60, 62), due to the intrinsic metal-dielectric-metal structure).

As per claims 6 and 24, wherein said parasitic capacitances between the write lines (60, 62) and read lines other set of service lines, 60, 62) are used to cancel crosstalk noise between said write lines and said read lines due to the effective "twisting" structure of the traces.

As per claims 1 and 19, Carpenter et al. (WO 98/20485 A1) does not expressly disclose a single crossing point of said write lines between said preamplifier connection point and said slider contact pads (22) as being placed halfway between said preamplifier connection point and said slider contact pads (e.g., note the phrase “a single crossing point” requires just a crossing at the midpoint, but does not preclude other crosses of the wiring - e.g., see Applicant’s claims 4 and 22, which depend from claims 1 and 19, respectively, and which recite “multiple crossing points.”

Murata et al. (JP 06-342858 A), however, discloses an integrated circuit chip, wherein the signal lines (1, 2) between the IC chip (7) and the termination pads (3, 4) are crossed halfway between the IC chip and the termination pads (3, 4). Murata et al. (JP 06-342858 A), as readily depicted in FIG. 2, illustrates the advantages to such midpoint crossing, whereby by providing such a symmetry (i.e., a crossing at a half point between the lines (1, 2), stating in paragraph [0010] of the enclosed English-machine translation of Murata et al. (JP 06-342858 A)

:

An operation of this example is explained with reference to drawing 2. It is a current I1 and I2 to the signal-transmission tracks 1 and 2 which cross through glass membrane 8 as shown in this drawing. It is flowing to the opposite direction, respectively. It is a current I1 to the one side (left-hand side in drawing) of the part which the signal-transmission tracks 1 and 2 intersect. Field M1a and the current I2 to produce Field M1b to produce is a direction which suits in slight strength mutually, and is the synthetic field M1. It generates downward. And it is a current I1 to the other side (right-hand side in drawing) of the part which the signal-transmission tracks 1 and 2 intersected. Field M2a and the current I2 to produce Field M2b to produce suits in slight strength mutually, and is the synthetic field M2. It generates upward. Namely, field M1 Field M2 It is generated in the direction negated mutually. Therefore, since *the field* which a field *is negated equivalent* and generated to the integrated-circuit exterior can be suppressed if an

integrated circuit is seen as a whole, an improvement of an electromagnetic noise radiation property can be performed. [Emphasis added].

Given the express teachings and disclosures of Murata et al. (JP 06-342858 A) and Carpenter et al. (WO 98/20485 A1), it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a crossing point of said write lines between said preamplifier connection point and said slider contact pads of Carpenter et al. (WO 98/20485 A1) as placed halfway between said preamplifier connection point and said slider contact pads, as exemplified and taught by Murata et al. (JP 06-342858 A) - note also that Murata et al. (JP 06-342858 A) further suggest that more than one crossing is suitable, ala Carpenter et al. (WO 98/20485 A1). See paragraph [0016] of Murata et al. (JP 06-342858 A).

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide a crossing point of said write lines between said preamplifier connection point and said slider contact pads of Carpenter et al. (WO 98/20485 A1) as placed halfway between said preamplifier connection point and said slider contact pads, as exemplified and taught by Murata et al. (JP 06-342858 A) - note also that Murata et al. (JP 06-342858 A) further suggest that more than one crossing is suitable, ala Carpenter et al. (WO 98/20485 A1) -see paragraph [0016] of Murata et al. (JP 06-342858 A)) in order to achieve the predictable result of providing a field which is *negated equivalently (i.e., symmetrically at a midway point of a single crossing)*, whereby "an improvement of an electromagnetic noise radiation property can be performed." See paragraph [0011] of Murata et al. (JP 06-342858 A).

Additionally, the following 35 USC 103(a) rejections are being made in light of a recent Supreme Court opinion.

The Supreme Court has issued its opinion in *KSR*, regarding the issue of obviousness under 35 U.S.C. 5 103(a) when the claim recites a combination of elements of the prior art. *KSR Int'l Co. v. Teleflex, Inc.*, 82 USPQ 2d 1385 (U.S. 2007).

In the decision, the Court reaffirmed the Graham factors in the determination of obviousness under 35 U.S.C. 5 103(a), inclusive of the four factual inquiries under Graham, which are:

- (a) determining the scope and contents of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating evidence of secondary consideration.

Graham v. John Deere, 383 U.S. 1, 17-18, 148 USPQ 459,467 (1966).

It is noted that the Court did not totally reject the use of “teaching, suggestion, or motivation” as a factor in the obviousness analysis. Rather, the Court recognized that a showing of “teaching, suggestion, or motivation” to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. 103(a).

More noteworthy, however, the Court rejected a rigid application of the “teaching, suggestion, or motivation” (TSM) test, which required a showing of some teaching, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the prior

art elements in the manner claimed in the application or patent before holding the claimed subject matter to be obvious.

The Court noted that the analysis supporting a rejection under 35 U.S.C. 103(a) should be made explicit, and that it was “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. The Court specifically stated:

Often, it will be necessary . . . to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an ***apparent reason*** to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis ***should be made explicit***.

KSR, at 1396.

Moreover, the Supreme Court also held in *KSR*, that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 1395.

Response to Arguments

In the submission filed on November 2, 2007, the Applicant alleges at pages 4-5:

[I]ndependent claim 1 of the instant application . . . clearly states the purpose of the instant application which is “used to cancel out time-delayed (transmission line effects) parts of said crosstalk and said EME” . . .

Therefore, based on the wording of independent claims 1 and 19, which clearly states the advantage of the instant application, claims 1 and 19 and their dependent claims should be allowed over Carpenter et al. In addition, the examiner in the September 5, 2007 office action, reinforces the fact that “Carpenter et al. does not expressly disclose a single crossing point of said

write lines between said preamplifier connection point and said slider contact pads...".

Murata et al. is in different fields of practice than the instant application and Carpenter. Murata is in the field of hybrid integrated circuits, whereas the instant application and Carpenter are in the field of magnetic recording assemblies. Murata et al. refers to magnetic fields not induced crosstalk voltage caused by capacitive coupling as in the instant application. For example, this is clearly demonstrated in Murata's Purpose, "To obtain a hybrid integrated circuit enabling suppression of a magnetic field generated when a differential signal is transmitted and also improvement of a noise emission characteristic." The above shows that Murata is in a different field from both the instant application and in a different field from Carpenter. Therefore, as the Supreme Court has stated, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. Since Murata is in the field of hybrid integrated circuits and not magnetic trace assemblies such as in the instant application and as in Carpenter, there is not a clear reason that would have prompted a person of ordinary skill in the relevant field to combine Murata with Carpenter. Therefore independent claims 1 and 19 should be allowed since there is no obvious reason to combined Carpenter with Murata. Similarly, dependent claims 3-6 and 21-24 which depend on independent claims 1 and 19 should now be allowed.

The Examiner has carefully considered the Applicant's arguments, but maintains the rejection.

That is, Carpenter et al. (WO 98/20485 A1) discloses a crosstalk and EME (electromagnetic emission) minimizing trace suspension assembly structure (16) and a method thereof, comprising: multiple write lines (e.g., 60, 62) which are crossed between a preamplifier connection point (at 54) and slider write contact pads (22) (e.g., see, *inter alia*, page 7, line 12-23 and page 8, lines 20-29); multiple read lines (e.g., 60, 62 - see in particular page 8, lines 21-25) driven by preamplifier circuits (including 54); the aforementioned slider contact pads (22),

which connect said write lines (60, 62) to said trace suspension assembly (16); the aforementioned slider contact pads (22), which connect said read lines (another set of service lines (60, 62) to said trace suspension assembly (16); and multiple write line driven by preamplifier circuits (at 54 via the semiconductor IC chip), wherein said multiple write lines which are crossed between said preamplifier connection point and said slider contact pads are used to cancel out time-delayed (transmission line effects) parts of said crosstalk and said EME.

Carpenter et al. (WO 98/20485 A1) does not expressly disclose a single crossing point of said write lines between said preamplifier connection point and said slider contact pads (22) as being placed halfway between said preamplifier connection point and said slider contact pads (e.g., note the phrase "a single crossing point" requires just a crossing at the midpoint, but does not preclude other crosses of the wiring - e.g., see Applicant's claims 4 and 22, which depend from claims 1 and 19, respectively, and which recite "multiple crossing points.")

Murata et al. (JP 06-342858 A), however, discloses a integrated circuit chip, wherein the signal lines (1, 2) between the IC chip (7) and the termination pads (3, 4) are crossed halfway between the IC chip and the termination pads (3,4). Murata et al. (JP 06-342858 A), as readily depicted in FIG. 2, illustrates the advantages to such midpoint crossing, whereby by providing such a symmetry (i.e., a crossing at a half point between the lines (1, 2), stating in paragraph [0010] of the enclosed English-machine translation of Murata et al. (JP 06-342858 A) :

An operation of this example is explained with reference to drawing 2. It is a current I1 and I2 to the signal-transmission tracks 1 and 2 which cross through glass membrane 8 as shown in this drawing. It is flowing to the opposite direction, respectively. It is a current I1 to the one side (left-hand side in drawing) of the part which the signal-transmission tracks 1 and 2 intersect. Field M1a and the current I2 to produce Field M1b to produce is a direction which suits in slight strength mutually, and is the synthetic field

M1. It generates downward. And it is a current I1 to the other side (right-hand side in drawing) of the part which the signal-transmission tracks 1 and 2 intersected. Field M2a and the current I2 to produce Field M2b to produce suits in slight strength mutually, and is the synthetic field M2. It generates upward. Namely, field M1 Field M2 It is generated in the direction negated mutually. Therefore, since *the field* which a field *is negated equivalent* and generated to the integrated-circuit exterior can be suppressed if an integrated circuit is seen as a whole, an improvement of an electromagnetic noise radiation property can be performed. [Emphasis added].

Given the express teachings and disclosures of Murata et al. (JP 06-342858 A) and Carpenter et al. (WO 98/20485 A1), it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a crossing point of said write lines between said preamplifier connection point and said slider contact pads of Carpenter et al. (WO 98/20485 A1) as placed halfway between said preamplifier connection point and said slider contact pads, as exemplified and taught by Murata et al. (JP 06-342858 A) - note also that Murata et al. (JP 06-342858 A) further suggest that more than one crossing is suitable, ala Carpenter et al. (WO 98/20485 A1). See paragraph [0016] of Murata et al. (JP 06-342858 A) in order to achieve the predictable result of providing a field which *is negated equivalently (i.e., symmetrically at a midway point of a single crossing)*, whereby “an improvement of an electromagnetic noise radiation property can be performed.” See paragraph [0011] of Murata et al. (JP 06-342858 A).

It appears that the Applicant contends that Murata et al. (JP 06-342858 A) is in “different fields of practice than the instant application and Carpenter.” However, it is well settled that the prior art relevant to an obviousness determination encompasses not only the field of the inventor’s endeavor, but also any analogous arts. See *Heidelberger Druckmaschinen AG v.*

Hantscho Commercial Products Inc., 21 F.3d 1068, 30 USPQ2d 1377 (Fed. Cir. 1994) and *In re Wood*, 599 F.2d 1032, 202 USPQ 171 (CCPA 1979). The test of whether a reference is from a nonanalogous art is first, whether it is within the field of the inventor's endeavor, and second, if it is not, whether it is reasonably pertinent to the particular problem with which the inventor was involved. See *In re Wood*, 599 F.2d at 1036, 202 USPQ at 174 (CCPA 1979). A reference is reasonably pertinent if, even though it may be in a different field of endeavor, it is one which because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem. *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1061 (Fed. Cir. 1992).

Here, the Applicant's and Carpenter et al. disclosures are concerned with suppression of extraneous signals along signal transmission interconnections that could interfere with electromagnetic sources that interact, disadvantageously, with signal lines between components in a signal integrated circuit structure.

Murata et al. discloses an analogous integrated circuit structure, using an IC chip, and other components, such as a chip resistor, chip capacitor. As is known, a hybrid integrated circuit generally has on an appropriate support several passive components, such as resistors and capacitors deposited as thin or thick films, and several active components, such as diodes, transistors, or monolithic integrated circuits. The components are interconnected by an interconnection network consisting of conducting layers, for transmitting signals.

Moreover, Murata et al. (JP 06-342858 A) discloses such an integrated circuit chip, wherein the signal lines (1, 2) between the IC chip (7) and the termination pads (3, 4) are crossed halfway between the IC chip and the termination pads (3,4).

Murata et al. (JP 06-342858 A), as readily depicted in FIG. 2, illustrates the advantages to such midpoint crossing, whereby by providing such a symmetry (i.e., a crossing at a half point between the lines (1, 2), stating in paragraph [0010] of the enclosed English-machine translation of Murata et al. (JP 06-342858 A) :

An operation of this example is explained with reference to drawing 2. It is a current I1 and I2 to the signal-transmission tracks 1 and 2 which cross through glass membrane 8 as shown in this drawing. It is flowing to the opposite direction, respectively. It is a current I1 to the one side (left-hand side in drawing) of the part which the signal-transmission tracks 1 and 2 intersect. Field M1a and the current I2 to produce Field M1b to produce is a direction which suits in slight strength mutually, and is the synthetic field M1. It generates downward. And it is a current I1 to the other side (right-hand side in drawing) of the part which the signal-transmission tracks 1 and 2 intersected. Field M2a and the current I2 to produce Field M2b to produce suits in slight strength mutually, and is the synthetic field M2. It generates upward. Namely, field M1 Field M2 It is generated in the direction negated mutually. Therefore, since *the field* which a field *is negated equivalent* and generated to the integrated-circuit exterior can be suppressed if an integrated circuit is seen as a whole, an improvement of an electromagnetic noise radiation property can be performed. [Emphasis added].

Given the express teachings and disclosures of Murata et al. (JP 06-342858 A) and Carpenter et al. (WO 98/20485 A1), it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a crossing point of said write lines between said preamplifier connection point and said slider contact pads of Carpenter et al. (WO 98/20485 A1) as placed halfway between said preamplifier connection point and said slider contact pads, as exemplified and taught by Murata et al. (JP 06-342858 A) - note also that Murata et al. (JP 06-342858 A) further suggest that more than one crossing is suitable, ala Carpenter et al. (WO 98/20485 A1). See paragraph [0016] of Murata et al. (JP 06-342858 A) in order to achieve the

predictable result of providing a field which *is negated equivalently (i.e., symmetrically at a midway point of a single crossing)*, whereby “an improvement of an electromagnetic noise radiation property can be performed.” See paragraph [0011] of Murata et al. (JP 06-342858 A).

In the Examiner’s view, Murata’s et al. (JP 06-342858 A) field of endeavor (i.e., an electrical interconnection between and among integrated circuitry) logically would have commended itself to an inventor’s attention in considering the problem of minimizing or suppressing noise on the electrical trace interconnections between IC’s and associated electrical components. Thus, while Murata et al. (JP 06-342858 A) may not be in the applicant’s field of endeavor, he is nevertheless reasonably pertinent to the problem with which the applicant’s were faced. This being the case, the second prong of the test set forth in *Wood* is satisfied and therefore Murata et al. (JP 06-342858 A) is analogous art.

Conclusion

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

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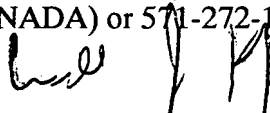
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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (571) 272-7577. The examiner can normally be reached on Monday-Friday (7:30AM-6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


William J. Klimowicz
Primary Examiner

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